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REMARKS

In the Office Action of July 28, 2004, claims 1-20 are pending. Claims 1, 9, and 20 are independent claims from which all other claims depend therefrom. Claims 1, 9, and 20 have been amended. Note that claims 1, 9, and 20 have been amended for clarification reasons not for patentability reasons.

Claims 1-3, 5-10, and 13-17 stand rejected under 35 U.S.C. 102(b) as being anticipated by Hirabayashi et al. (5,874,904).

Claims 1 and 9 have similar limitations and are therefore described together. Claims 1 and 9 recite a sensing system for a vehicle and a method of performing safety system operations within a vehicle. The sensing system of claim 1 includes the limitations of a single vision sensor having a position with coordinates on the vehicle and a controller generating a safety system signal in response to the coordinates. The method of claim 9 includes similar limitations, specifically, determining the coordinates of only a single vision sensor and generating a safety system signal in response to the determined position.

In using a single vision sensor and in performing a safety system operation in response to a known position of the vision sensor, the claimed invention minimizes the number of sensors and related system components needed to perform safety system tasks. A single sensor is utilized instead of multiple sensors.

Applicants submit that the term "position" within the claims refers to the coordinates of the vision sensor. In other words, the term "position" refers to any set of numbers that are used to describe and specify the location of the vision sensor within the vehicle.

The Office Action states that Hirabayashi discloses a single vision sensor having a position and generating a safety system signal in response to that position, and in so doing refers to Figures 1, 7, 8, 14, 19, and 21, as well as columns 1 and 2 of Hirabayashi. The Applicant, respectfully, traverses. Although Hirabayashi discloses the use of multiple sensors and one may assume that the sensors have associated positions on a vehicle, Hirabayashi does not

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determine the actual position of the sensors, have knowledge of their position, or suggest the like. Also, Hirabayashi does not teach or suggest generating a safety system signal in response to a known position of a sensor or through use of only a single sensor.

Hirabayashi discloses the use of a pair of light-receiving devices to determine the position of a target. The light-receiving devices have associated lenses. A first lens 1 is positioned forward of a first light-receiving device 3 and a second lens 2 is positioned forward of a second light-receiving device 4. Distance between the lenses 1 and 2 is known and distances between each of the lenses 1 and 2 and each of the light-receiving devices 3 and 4 is known. Distances  $a_{L1}$  and  $a_{R1}$  between vertical lines extending through the centers of the lenses  $O_L$  and  $O_R$  and the light-receiving devices 3 and 4 are determined. From the known and determined distances the inter-vehicle distance between the host vehicle and the target vehicle is determined. This is described in the referred to columns 1 and 2 of Hirabayashi. The distance between the host vehicle and the target vehicle are determined without knowledge of the positions of the two light-receiving devices.

In Figures 1, 7, 8, 14, 19, and 21 of Hirabayashi a pair of light-receiving devices are utilized to determine distance between the host vehicle and a target vehicle using a similar method as described above, see col. 10, lines 47-53. However, each light-receiving device is in the form of a series of optical sensor arrays instead of a single optical sensor array to improve inter-vehicle distance measurement accuracy. In none of the stated figures is the position of the light-receiving devices within the host vehicle determined or utilized to determine the inter-vehicle distance.

Thus, Hirabayashi fails to teach or suggest the use of a single vision sensor to perform a safety system task and fails to teach or suggest the determination or use of known positions of a vision sensor to perform a safety system task. In order for a reference to anticipate a claim the reference must teach or suggest each and every element of that claim, see MPEP 2131 and *Verdegrad Bros. V.*

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*Union Oil Co. of California*, 814 F.2d 628. Therefore, since Hirabayashi fails to teach or suggest each and every element of claims 1 and 9, claims 1 and 9 are novel, nonobvious, and are in a condition for allowance. Also, since claims 1-8 and 10-19 depend from claims 1 and 9, respectfully, they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons.

Claims 12 and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hirabayashi in view of Kurahashi et al. (5,529,139).

Claim 20 is similar to claims 1 and 9 and recites an adaptive cruise control system, which includes all of the limitations recited in claim 1 and further includes the limitations of a controller determining size and up-angle of a detected object, determining range of the object, and reducing speed of the vehicle in response to the range.

The Office action relies on Hirabayashi for the teaching of all of the limitations of claim 20 except for the limitation of reducing the speed of the vehicle in response to range for which it relies on Kurahashi. Kurahashi discloses a method of maintaining an inter-vehicle distance. Kurahashi adjusts the speed of a host vehicle in response to a determined inter-vehicle distance. Like Hirabayashi, Kurahashi also fails to teach or suggest performing a safety system task in response to a determined or known vision sensor position. Kurahashi simply detects an inter-vehicle distance. Kurahashi is not concerned with the position of the distance detector utilized therein, since inter-vehicle distance can be determined without such knowledge.

Referring to MPEP 706.02(j) and 2143, to establish a *prima facie* case of obviousness the prior art references must teach or suggest all the claim limitations. Since, both Hirabayashi and Kurahashi fail to teach or suggest each and every element of claim 20, claim 20 is also novel, nonobvious, and is in a condition for allowance.

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In light of the remarks, Applicant submits that all of the rejections are overcome. The Applicant has added no new matter to the application. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments, she is respectfully requested to call the undersigned attorney.

Respectfully submitted,

ARTZ & ARTZ P.C.

  
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Jeffrey J. Clapp, Reg. No. 50,579  
28333 Telegraph Road, Suite 250  
Southfield, MI 48034  
(248) 223-9500

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